

## CLAIMS

1. A process for producing a ceramic slurry composition for 3D printing comprising the steps of:
  - 5 a. mixing precursor inorganic components of porcelain using ball mill, then drying to obtain a homogeneous mix of porcelain;
  - b. modifying the surface of the porcelain using a polymeric additive via a ball mill with a solvent selected from methanol or isopropyl alcohol, then drying to obtain modified porcelain powder;
  - 10 c. combining the modified porcelain powder with an organic resin at a porcelain-to-resin ratio of 1:2 to 2:1 using ball mill for 24 to 48 hours to obtain a slurry; and
  - d. ageing the slurry for 5 to 8 hours to remove trapped air and obtain the ceramic slurry composition.
2. The process of claim 1, wherein the precursor inorganic components in step a) comprises 15-20% w/w feldspar, 50-60% w/w silica, 5-10% w/w clay, and 15-20% w/w alumina.
- 20 3. The process of claim 1, wherein the polymeric additive is selected from the group consisting of polyethylene glycol, oleic acid, stearic acid, and combinations thereof.
- 25 4. The process of claim 1, wherein the organic resin is a liquid organic resin selected from the group consisting of polylactic acid, polymethylmethacrylate, and acrylate-based resins.

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